

DESCRIPTIONS OF TWO NEW SPECIES OF *LECANIUM* FROM CEYLON.

BY E. ERNEST GREEN.

*LECANIUM VIRIDE.**Ovum*—pale green, sparsely covered with a white waxy powder.Longer diameter, $\frac{8}{1000}$ of an inch.

Newly-hatched larva—pale green, flat, regularly oval, longer diameter about twice the shorter. A broad indentation at extremity of abdomen, with a central pointed spine, and on each side a small conical tubercle ending in a long curved seta. Tarsi with four knobbed digitules. Antennæ terminating in a few short stout hairs.

Larva—oval, longer diameter about three times the shorter. Pale green. Eyes minute, black, lateral. Abdominal cleft extending one-seventh the length of insect, terminating above in two small yellowish triangular scales, below in a triangular cavity, within which is a small white point. Two small indentations on each side corresponding to lateral stigmata, one situated anteriorly at about a quarter the length of the insect, the second about the middle, both of them marked by a small white point, which on the under-side is continued within the margin as a line of white powdery matter. Antennæ and legs fully developed but small, lying in shallow channels on under-surface of body. A few short hairs on lower part of abdomen. Rostrum terminating in a long, fine, brownish, setiform tube.

Adult ♂—unknown.

Adult ♀—bright green. Intestine showing through on dorsum as an irregular curved chain of oblong black spots, which, in the living insect, have a periodic undulating motion. Above smooth, moderately convex, slightly concave beneath. Irregularly oval; anterior extremity sub-acuminate. Abdominal cleft with thickened margin, terminating above in two yellowish triangular scales. Eyes submarginal, black. Margin of scale with an extended series of minute hairs. Antennæ and legs small, lying in channels; the antennæ with seven joints, the 4th longest, the three terminal ones shortest (Fig.); tarsi one-third shorter than tibiæ, with two short, broad digitules; two digitules on claws long, thin. Rostral tube brownish. Length, $1\frac{1}{2}$ — $1\frac{3}{4}$ lines; breadth, 1 — $1\frac{1}{4}$ lines.

NOTE.—The eggs are hatched very shortly after deposition. The young insects appear to remain for some time under the protecting scale of the parent. Under most of the adult insects may be found a pulverulent mass, consisting of the newly-hatched larvæ and the collapsed membranous coverings of the ova.

The species occurs on various trees in Ceylon, including *Cinchona*, orange, *Gardenia*, &c.; but it more especially affects the coffee tree, its connection with which has been so disastrous that in many parts of the island it has been necessary to abandon the cultivation of this product.

[This species is evidently allied to *L. hesperidum*.—J. W. D.]

LECANIUM MANGIFERÆ.

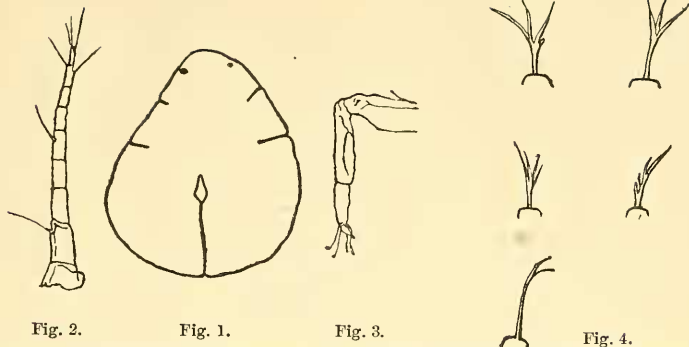


Fig. 2.

Fig. 1.

Fig. 3.

Fig. 4.

Ovum—oblong-oval, very pale green. Just before hatching the eyes of the larvæ are visible through the skin.

Newly-hatched larva—oval, dull pale yellowish; eyes dull red; abdomen ending in two rounded lobes, between which is a pair of conical tubercles giving rise to two fine setæ about half as long as the body of the insect. Antennæ with a few stiff hairs.

Half-grown larva—irregularly oval, broadest posteriorly, flat, very thin; with abdominal cleft, and lateral clefts above and below thorax. Margin with short, minute cleft or glandular hairs. Colour very pale green, in parts almost colourless. Eyes black. Anal scales triangular, yellowish. Remains of anal setæ visible on under-side as two short, opaque white threads, situated in a deep cavity below anal scales. Feet terminating in knobbed digitules.

Adult ♀—thin, smooth, flatly convex, irregularly triangular, or rather short oval narrow in front, very broad and rounded posteriorly. Marginal hairs not so conspicuous as in larva (Fig. 4). Posterior margin cleft to the small rhomboidal anal aperture, which is situated almost at the centre of the disc. Colour dull greenish-yellow. Eyes black, situated very close to margin. Feet with two knobbed digitules on the end of the tarsi and two on the claws. Abdomen concave below, forming a receptacle for the eggs. Rostrum with a long, thin, brown, hair-like sucking tube.

Size of insect, $2 \times 1\frac{1}{2}$ lines.

Male unknown.

I have at present noticed this insect only upon mango trees (*Mangifera indica*) in the district of Punduloya, Ceylon. It affects the under-sides of the leaves, but its presence may be detected by the usual black fungus that follows the attacks of nearly all insects of this Family, and in this instance gives to the tree an appearance as of having been thickly dusted with soot. It is very prolific; under one female I counted 54 eggs and eight newly-escaped larvæ, while the presence of numerous empty egg skins showed that other larvæ had previously left their shelter. The parent insect was still alive, and other eggs could be seen inside its body, which was almost transparent.

The young larvæ are very active, and may be seen wandering over the leaves. They commence to form the characteristic scale before finally settling down: they are then so extremely thin and transparent that they can only be detected when the light strikes them at an angle, when they appear as a thin film-like spot upon the leaves. Even the adult insect, when examined with transmitted light under a microscope, displays all its internal organs, and globules can be seen slowly circulating through its juices. Some specimens appear to the naked eye discoloured by a central dark spot; these are infested by a Hymenopterous parasite, which may be distinctly seen within the body of its host—in some individuals the larvæ, in others the pupæ or even imago ready to emerge. I have been unable to find the male of this *Lecanium*; it is probable that it is at present reproducing its kind by an asexual process (*cf.*, Ent. Mo. Mag., xxiv, p. 25).

Eton, Punduloya, Ceylon :

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[With the foregoing Mr. Green sent a quantity of the dry scales attached to pieces of mango leaves, and they at once arrested attention by their form, like the outline of a median longitudinal section of a short pear, due to the dilatation all round the body, behind the head, of the marginal area, in which on each side, at and denoting the thoracic region, were two transverse incisions extending from the margin for a considerable distance inwards, and going through the substance of the scale. These scales strongly resemble *L. acuminatum*, except in the lateral slits, which are not mentioned or indicated by Signoret in his description and figure of that species (Ess. Cochin., p. 227, pl. xi, fig. 1). With the scales Mr. Green also sent excellent drawings of the living insects in all stages of growth, but these being coloured are not suitable for reproduction by the process here employed; moreover, separate enlarged figures of the antennæ and legs were wanting; these, with an outline of the scale (Fig. 1), have been supplied by the kindness of Mr. R. T. Lewis, to whom I am also greatly indebted for his practised aid in mounting and examining a number of specimens. The result is unexpected, for instead of the antennæ having seven joints, like *L. acuminatum*, as described by Signoret, the normal number in this species is eight (Fig. 2), as ascertained from a good many examples. It is true that in a few cases only seven joints could be seen, and then the long 4th joint mentioned by Signoret was apparent, but in the majority of instances instead of this so-called 4th joint, there were two distinct articulations. I apprehend that the appearance of the lesser number only is due to immaturity, and consequent shrinking; yet it may be that owing to the delicacy and transparency of the antennæ, the joint in question, like in some species of the other sectional divisions of the genus, occasionally, although present, is invisible. This will easily be understood by any one accustomed to observe delicate structures under a high microscopic power. The legs are also discrepant from those of *L. acuminatum*, for while in that species the tarsi are scarcely half as long as the tibiæ (a character on which Signoret lays special stress),